

WHAT IS CLAIMED IS:

1. A positive-working photoresist composition which comprises, as a uniform solution in an organic solvent:

(A) 100 parts by weight of a resinous compound capable of being imparted with increased solubility in an aqueous alkaline solution by interaction with an acid;

(B) from 0.5 to 30 parts by weight of a radiation-sensitive acid generating compound capable of generating an acid by irradiation with a radiation; and;

(C) an organic solvent in an amount sufficient to dissolve the components (A) and (B),

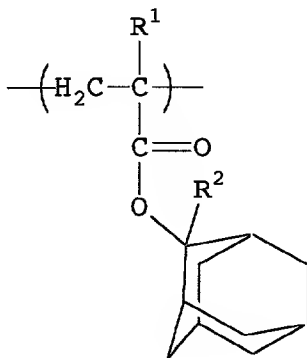
the component (A) being a copolymer consisting of the monomeric units of

(a1) from 20 to 80% by moles of 2-alkyl-2-adamantyl (meth)acrylate units,

(a2) from 10 to 60% by moles of 2-oxooxapentyl(meth)acrylate units, and

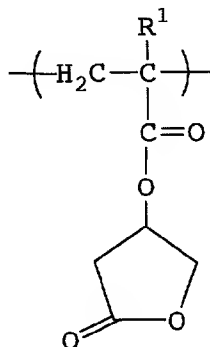
(a3) from 10 to 60% by moles of 1-hydroxyadamantyl (meth)acrylate units.

2. The positive-working photoresist composition as claimed in claim 1 in which the monomeric unit (a1) is a unit represented by the general formula



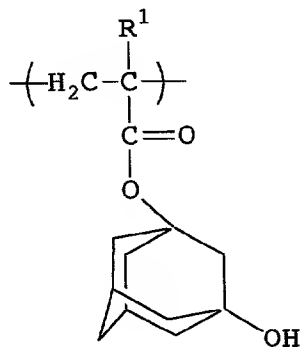
in which R¹ is a hydrogen atom or a methyl group and R² is an alkyl group having 1 to 4 carbon atoms.

3. The positive-working photoresist composition as claimed in claim 1 in which the monomeric unit (a2) is a unit represented by the general formula



in which R¹ is a hydrogen atom or a methyl group.

4. The positive-working photoresist composition as claimed in claim 1 in which the monomeric unit (a3) is a unit represented by the general formula



in which R¹ is a hydrogen atom or a methyl group.

5. The positive-working photoresist composition as claimed in claim 1 in which the molar fraction of the monomeric units (a1) is in the range from 30 to 60%.

6. The positive-working photoresist composition as claimed in claim 1 in which the molar fraction of the monomeric units (a2) is in the range from 20 to 50%.

7. The positive-working photoresist composition as claimed in claim 1 in which the molar fraction of the monomeric units (a3) is in the range from 20 to 40%.

8. The positive-working photoresist composition as claimed in claim 1 in which the component (B) is an onium salt compound having a fluorinated alkylsulfonic acid ion as the anionic counterpart.

9. The positive-working photoresist composition as claimed in claim 1 in which the component (C) is a mixture of (c1) propyleneglycol monomethyl ether acetate, ethyl lactate or a combination thereof and (c2) γ -butyrolactone in a mixing proportion of 70:30 to 95:5 by weight.

10. The positive-working photoresist composition as claimed in claim 1 which further comprises (D) from 0.01 to 0.2 part by weight of a secondary or tertiary aliphatic amine compound per 100 parts by weight of the component (A).

11. The positive-working photoresist composition as claimed in claim 10 in which the component (D) is a trialkanol amine.